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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,782	02/02/2001	Raymond Grant Rowe	RD-24,364	8533

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GENERAL ELECTRIC COMPANY
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EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/19/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,782

Applicant(s)

ROWE ET AL.

Examiner

Harry D Wilkins, III

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 8-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I, claims 1-7, in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. The term "small" in claims 2 and 3 is a relative term which renders the claim indefinite. The term "small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The scope of how small the second phase precipitates are is indefinite.
5. Claim 3 recites the limitation "the small second phase precipitates" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inagaki et al (US 4,810,461).

Inagaki et al anticipate the invention as claimed. Inagaki et al teach (see abstract) an α -zirconium-based alloy that is used as a nuclear fuel cladding. Inagaki et al do not expressly teach that the α -phase of the zirconium is coarse-grained lath α microstructure. Inagaki et al teach (see col 5, lines 7-68) that the method of processing the zirconium alloy is quenching from a β -phase temperature (i.e.-beta heating treating followed by fast quenching), cold working and annealing. The annealing is conducted and 550-640°C. Inagaki et al teach (see col 9, lines 16-27) that the cold working step can be at 40% working ratio and that the final annealing occurred at a temperature above the recrystallization temperature.

With respect to the property of the coarse grained lath α microstructure, the method of forming the alloy taught by Inagaki et al is substantially identical to the disclosed process, therefore, one of ordinary skill in the art would have expected that the products taught by the reference would inherently have the same coarse grained lath α microstructure as claimed.

"Where the claimed and prior art products are identical or substantially identical in structure or composition or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing they are not.' In re Spada, 15 USPQ2d 1655, 168 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best 195 USPQ 430, 433 (CCPA 1977)." See MPEP 2112.01

Regarding claims 2 and 3, Inagaki et al teach (see col 4, lines 42-54) that the alloy contains small second phase precipitates, specifically Sn_2Ni_3 . The size of the particles is less than $0.2\text{ }\mu\text{m}$.

Regarding claims 4 and 5, because the process taught by Inagaki et al is substantially identical to the method employed in the present invention, one of ordinary skill in the art would have considered the zirconium alloy of Inagaki et al to inherently possess a less than 50% partially recrystallized microstructure as claimed.

Regarding claims 6 and 7, because the process taught by Inagaki et al is substantially identical to the method employed in the present invention, one of ordinary skill in the art would have considered the zirconium alloy of Inagaki et al to inherently possess an acicular structure which includes a lath spacing within the range of $0.5\text{-}3.0\text{ }\mu\text{m}$ as claimed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cheadle (US 4,065,328) teaches a zirconium-based alloy, but also teaches that fast quenching (more than $11^\circ\text{C}/\text{second}$) from the b-phase region causes the b-phase to transform into α -phase needles (i.e. -acicular or lath microstructure).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-F 7:30am-4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
July 15, 2002

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700